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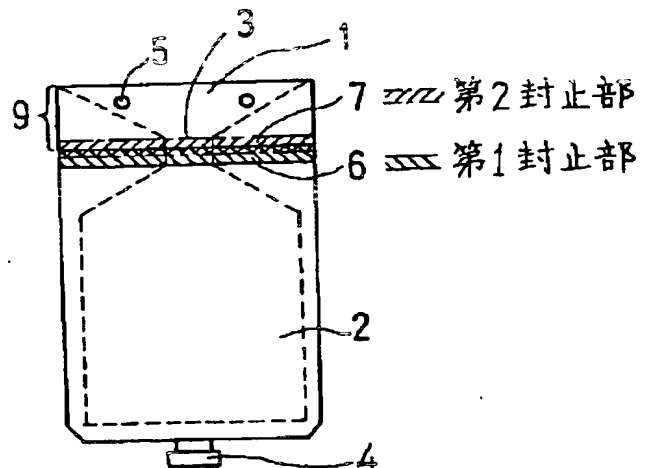
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(54)【考案の名称】 インク袋パック

(57)【要約】

【構成】 インクジェット記録に用いるインクを貯蔵するインク袋パックにおいて、インクを注入するパック開口部1よりも内側の部分を狭くしたゲート部3によりつながるインク貯蔵室2を備えて成ることを特徴とするインク袋パック。

【効果】 インクを注入するパック開口部よりも内側の部分を狭くしたゲート部を設けることにより、インク中の溶存ガス除去工程時のインクのバック外流出を軽減し、封止部距離を短縮することにより圧着封止工程時にインク袋パック内に空気が残留するのを防止するためのインク吐出量の軽減及び圧着封止時の信頼性が向上し、インクカートリッジの製造コストを低減することが可能となる。



(2)

【実用新案登録請求の範囲】

【請求項1】 インクジェット記録に用いるインクを貯蔵するインク袋パックにおいて、インクを注入するパック開口部よりも内側の部分を狭くしたゲート部によりつながるインク貯蔵室を備えて なることを特徴とするインク袋パック。

【図面の簡単な説明】

【図1】 本考案のインク袋パックの模式的外形斜視図である。

【図2】 本考案のインク袋パックの模式的外形正面図である。

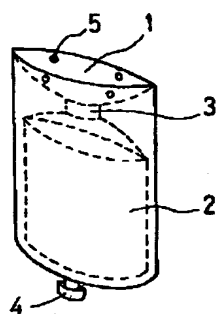
【図3】 従来のインク袋パックの模式的外形正面図であ

る。

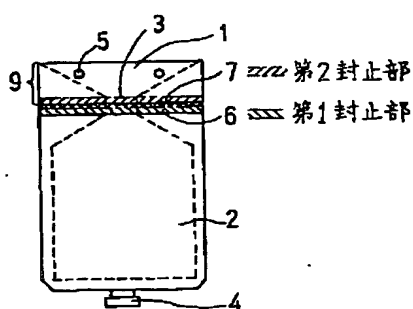
【符号の説明】

- 1 パック開口部
- 2 インク貯蔵室
- 3 ゲート
- 4 インク導出口
- 5 シャフト通し穴
- 6 第1封止部
- 7 第2封止部
- 8 インク流出防止用封止部
- 9 インク袋パック廃棄部分

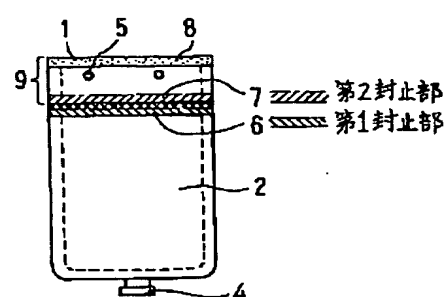
【図1】



【図2】



【図3】



(3)

**【考案の詳細な説明】****【0001】****【産業上の利用分野】**

この考案は、インクを貯蔵するインク袋パックにおいて、インクパッケージ作製の際の信頼性向上に好適なインク袋パックに関する。

**【0002】****【従来の技術】**

インクジェット記録方式は複数のノズルオリフィスからインクを吐出する為のエネルギーを発生する駆動素子を駆動してインク液滴を吐出するものであるが、インクジェットヘッド内のインク中に気泡が発生すると吐出エネルギーが気泡の体積圧縮に使われてしまうことにより吐出不良が発生するといった問題点があった。そこで、従来は図3のようなインク袋パックを用いて、インク中の溶存ガス除去を行い、その後、第1封止部6、第2封止部7を圧着封止していた。しかしながら、従来のインク袋パックはパック開口部1とインク貯蔵室2だけで構成されているため、インク中の溶存ガス除去工程時に多量のインク流出が起こり、またインク袋パックの圧着封止工程時の信頼性に問題があった。

**【0003】****【考案が解決しようとする課題】**

従来のインク袋パックはインク中溶存ガスの除去及びインク袋パックの圧着封止を行う際に以下のような問題点を有していた。

インク中の溶存ガス除去工程においてインク袋パック内の圧力変動によりパック開口部1からインク貯蔵室2内のインクの約20～30%がパック外に流出してしまった。インクパックの圧着封止時にインク袋パック内に空気が残留するのを防止するため貯蔵室内のインクを少量排出して封止していたが、封止部の距離が長いためインクの排出量も増えてしまった。また圧着封止時に排出するインクがパック外に飛び出さないように、図3のインク流出防止用封止部8を封止した後、第1封止部6をインク貯蔵室2内に空気が残らないように圧着封止した後不用部分9をカットし、カット部のポリエチレンの密着強度を上げるために第2封止部7をさらに圧着封止していた。

(4)

**【0004】**

しかし、上記の方法では第1封止の際に空気がインク貯蔵2内に残る場合がありインクパッケージの歩留まりは70～85%程度であった。

**【0005】****【課題を解決するための手段】**

上記課題を解決するために、この考案はインクジェット記録に用いるインクを貯蔵するインク袋パックにおいて、インクを注入するパック開口部1よりも内側の部分を狭くしたゲート部3によりつながるインク貯蔵室を備えて成ることを特徴とするインク袋パックを使用することによって解決される。

**【0006】****【作用】**

本考案によると、インク袋パックのパック開口部1よりも内側の部分を狭くしたゲート部3を設けることにより、インク中の溶存ガス除去工程においてインク流出抵抗が増大し、インクのパック外流出を10%以内に軽減することができる。またインクパックの圧着封止時において、封止部の距離が短いためインク袋パック内に空気が残留するのを防止するためのインク排出量が軽減できかつパック開口部を封止する必要がないため圧着封止時にパック内に空気が残留するといった不具合が解消され2度の封止で十分な信頼性を得ることが可能となる。

**【0007】****【実施例】**

以下に、この考案の実施例を図に基づいて説明する。

図1は本考案に係わるインク袋パックの模式的外形斜視図であり、はインク注入口である容器開口部、2はインク貯蔵室、3は容器開口部とインク貯蔵室とをつなぐゲート、4はインク導出口、5はインクパッケージ製造工程時に必要なシャフト通し穴を表わす。

**【0008】**

図2はインク袋パックの模式的外形正面図であり、6は第1封止部、7は第1封止部上部のカット部のポリエチレン樹脂の密着強度を上げるための第2封止部、9はインク袋パックの廃棄部分を表わす。

(5)

図3は従来のインク袋パックの外形正面図であり、6は圧着封止工程における第1封止部、7は第2封止部、8は第1封止時に排出するインクがパック外に流出するのを防止するためのインク流出防止用封止部を表わしている。

**【0009】**

本考案ではインク袋パックの封止部距離を従来の $1/5 \sim 1/3$ にすることにより、インクの溶存ガス除去工程時におけるインクのパック外流出量及び圧着封止時のインク排出量を従来のインク袋パックに比べ20～30%軽減することができる。封止部距離が従来の $1/3$ 以上になるとインク流出防止効果が低減してしまい、また $1/5$ 以下であるとインク袋パックへのインク注入の作業性が低下することになるため従来の $1/5 \sim 1/3$ の封止部距離が適当である。このインク流出軽減量は、1つのインク袋パックで用紙サイズA0の場合印字枚数（印字率5%の場合）が5～10%増加することに相当する。このため従来のようにインク袋パックにインク排出分を補うためにあらかじめ規定重量の2～3割増しのインクを注入する必要がなく、インクの無駄を防止することができ、インクカートリッジのコストダウンにつながる。また圧着封止時において従来は図3の第1封止部6、第2封止部7、インク流出防止用封止部8のように3度封止を行っていたが2度封止で十分な信頼性を確保することができ、作業性の向上と同時にインク袋パックの圧着封止時の歩留まりを従来の70～85%から90%以上に向上することが可能となった。

**【0010】****【考案の効果】**

以上説明したように、インクジェット記録に用いるインクを貯蔵するインク袋パックにおいて、パック開口部よりも内側の部分を狭くしたゲート部を設けることにより、インク中の溶存ガス除去工程時におけるインク貯蔵室内のインクのパック外流出をおさえ、インク袋パックの圧着封止部の距離を短くすることによりインク袋パック内に空気が残留するのを防ぐためのインク貯蔵室内のインク排出をおさえることによりインクカートリッジの製造コストを低減することができる。また本考案のインク袋パックを用いれば圧着封止2回で十分な信頼性が得られることにより圧着封止時の歩留まりを上げることができる。

**\* NOTICES \***

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

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**CLAIMS**

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[Utility model registration claim]

[Claim 1] In the ink bag pack which stores the ink used for ink jet record, it has the ink stockroom connected by the gate section which narrowed the part inside pack opening which pours in ink. Ink bag pack characterized by things.

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**DETAILED DESCRIPTION**

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[Detailed explanation of a design]

[0001]

[Industrial Application]

This design is related with the suitable ink bag pack for the improvement in dependability in the case of ink package production in the ink bag pack which stores ink.

[0002]

[Description of the Prior Art]

Although an ink jet recording method drives the driver element which generates the energy for carrying out the regurgitation of the ink from two or more nozzle orifices and carries out the regurgitation of the liquid ink drop, when air bubbles were generated in the ink in an ink jet head, there was a trouble that the poor regurgitation occurred, by using regurgitation energy for volume compression of air bubbles. Then, using an ink bag pack like drawing 3, dissolved gas removal in ink was performed and sticking-by-pressure closure of the 1st closure section 6 and the 2nd closure section 7 was carried out after that conventionally. However, since the conventional ink bag pack consisted of only pack opening 1 and an ink stockroom 2, a lot of ink outflows took place at the time of the dissolved gas removal process in ink, and the problem was in the dependability at the time of the sticking-by-pressure closure process of an ink bag pack.

[0003]

[Problem(s) to be Solved by the Device]

It had the following troubles, when the conventional ink bag pack performed removal of the dissolved gas in ink, and the sticking-by-pressure closure of an ink bag pack. In the dissolved gas removal process in ink, about 20 - 30% of the ink in the ink stockroom 2 has flowed out of the pack opening 1 out of a pack by the pressure fluctuation in an ink bag pack. In order to prevent that air remains in an ink bag pack at the time of the sticking-by-pressure closure of an ink pack, little discharge of the ink of the storage interior of a room was carried out, it was closed, but since the distance of the

closure section is long, the discharge of ink has also increased. Moreover, in order to cut the unnecessary part 9 and to raise the adhesion reinforcement of the polyethylene of the cut section after carrying out sticking-by-pressure closure of the 1st closure section 6 after closing the closure section 8 for ink outflow prevention of drawing 3 so that the ink discharged at the time of the sticking-by-pressure closure may not jump out besides a pack, and air may not remain in the ink stockroom 2, sticking-by-pressure closure of the 2nd closure section 7 was carried out further.

[0004]

However, by the above-mentioned approach, air may remain in the ink storage 2 in the case of the 1st closure, and the yield of an ink package was about 70 - 85%.

[0005]

[Means for Solving the Problem]

It is solved by using the ink bag pack characterized by equipping this design with the ink stockroom connected by the gate section 3 which narrowed the part inside the pack opening 1 which pours in ink in the ink bag pack which stores the ink used for ink jet record in order to solve the above-mentioned technical problem, and changing.

[0006]

[Function]

According to this design, by forming the gate section 3 which narrowed the part inside the pack opening 1 of an ink bag pack, ink effluent resistivity increases in the dissolved gas removal process in ink, and the outflow pack outside of ink can be mitigated within 10%. Moreover, since the ink discharge for preventing that air remains in an ink bag pack at the time of the sticking by pressure closure of an ink pack since the distance of the closure section is short can be mitigate and it is not necessary to close pack opening, it becomes possible to cancel the fault that air remains in a pack at the time of the sticking by pressure closure, and to acquire dependability sufficient by the closure which is 2 times.

[0007]

[Example]

Below, the example of this design is explained based on drawing.

Drawing 1 is the typical appearance perspective view of the ink bag pack concerning this design, and the gate where container opening which is a \*\* ink inlet, and 2 connect an ink stockroom, and 3 connects container opening and an ink stockroom, and 4 express ink derivation opening and the shaft run through hole which needs 5 at the time of an ink package production process.

[0008]

Drawing 2 is the typical appearance front view of an ink bag pack, and the 2nd closure section for 6 to raise the 1st closure section and for 7 raise the adhesion reinforcement of the polyethylene resin of the cut section of the 1st closure section upper part and 9 express the abandonment part of an ink bag pack.

Drawing 3 is the appearance front view of the conventional ink bag pack, and the closure section for ink outflow prevention for the ink which 6 discharges the 1st closure section in a sticking-by-pressure closure process and 7 in the 2nd closure section, and discharges 8 at the time of the 1st closure to prevent flowing out out of a pack is expressed.

[0009]

About this design, the flow outside a pack of the ink at the time of the dissolved GAZU

removal process of ink and the ink discharge at the time of the sticking-by-pressure closure are mitigable 20 to 30% compared with the conventional ink bag pack by making closure section distance of an ink bag pack conventional conventional  $1/5 - 1/3$ . Since the workability of the ink impregnation to an ink bag pack by the ink outflow prevention effectiveness decreasing and it being  $1/5$  or less will fall when closure section distance becomes  $1/3$  or more [conventional], the closure section distance of conventional conventional  $1/5 - 1/3$  is suitable. This amount of ink outflow mitigation is equivalent to printing number of sheets (in the case of 5% of rates of printing) increasing 5 to 10% in one ink bag pack in the case of a paper size A0. For this reason, in order to compensate an ink bag pack with a part for ink discharge like before, it is not necessary to pour in the ink of 2 - 3 premium of convention weight beforehand, and the futility of ink can be prevented, and it leads to the cost cut of an ink cartridge. Moreover, although the closure was conventionally performed 3 times like the 1st closure section 6 of drawing 3, the 2nd closure section 7, and the closure section 8 for ink outflow prevention at the time of the sticking-by-pressure closure, dependability sufficient by the closure could be secured twice, and it became possible to improve the yield at the time of the sticking-by-pressure closure of an ink bag pack to improvement in workability, and coincidence from 70 - 85 conventional% to 90% or more.

[0010]

[Effect of the Device]

In the ink bag pack which stores the ink used for ink jet record as explained above By preparing the gate section which narrowed the part inside pack opening The outflow pack outside of the ink of the ink storage interior of a room at the time of the dissolved gas removal process in ink is pressed down. The manufacturing cost of an ink cartridge can be reduced by pressing down the ink discharge of the ink storage interior of a room for preventing air remaining in an ink bag pack by shortening distance of the sticking-by-pressure closure section of an ink bag pack. Moreover, if the ink bag pack of this design is used, the yield at the time of the sticking-by-pressure closure can be raised by acquiring dependability sufficient by the two sticking-by-pressure closures.

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## TECHNICAL FIELD

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[Industrial Application]

This design is related with the suitable ink bag pack for the improvement in dependability in the case of ink package production in the ink bag pack which stores ink.

[0002]

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## PRIOR ART

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[Description of the Prior Art]

Although an ink jet recording method drives the driver element which generates the energy for carrying out the regurgitation of the ink from two or more nozzle orifices and carries out the regurgitation of the liquid ink drop, when air bubbles were generated in the ink in an ink jet head, there was a trouble that the poor regurgitation occurred, by using regurgitation energy for volume compression of air bubbles. Then, using an ink bag pack like drawing 3, dissolved gas removal in ink was performed and sticking-by-pressure



closure of the 1st closure section 6 and the 2nd closure section 7 was carried out after that conventionally. However, since the conventional ink bag pack consisted of only pack opening 1 and an ink stockroom 2, a lot of ink outflows took place at the time of the dissolved gas removal process in ink, and the problem was in the dependability at the time of the sticking-by-pressure closure process of an ink bag pack.

[0003]

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## EFFECT OF THE INVENTION

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### [Effect of the Device]

As explained above, in the ink bag pack which stores the ink used for ink jet record, the gate section which narrowed the part inside pack opening is prepared, The manufacturing cost of an ink cartridge can be reduced by pressing down the outflow pack outside of the ink of the ink storage interior of a room at the time of the dissolved gas removal process in ink, and pressing down the ink discharge of the ink storage interior of a room for preventing air remaining in an ink bag pack by shortening distance of the sticking-by-pressure closure section of an ink bag pack. Moreover, if the ink bag pack of this design is used, the yield at the time of the sticking-by-pressure closure can be raised by acquiring dependability sufficient by the two sticking-by-pressure closures.

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## TECHNICAL PROBLEM

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### [Problem(s) to be Solved by the Device]

It had the following troubles, when the conventional ink bag pack performed removal of the dissolved gas in ink, and the sticking-by-pressure closure of an ink bag pack.

In the dissolved gas removal process in ink, about 20 - 30% of the ink in the ink stockroom 2 has flowed out of the pack opening 1 out of a pack by the pressure fluctuation in an ink bag pack. In order to prevent that air remains in an ink bag pack at the time of the sticking-by-pressure closure of an ink pack, little discharge of the ink of the storage interior of a room was carried out, it was closed, but since the distance of the closure section is long, the discharge of ink has also increased. Moreover, in order to cut the unnecessary part 9 and to raise the adhesion reinforcement of the polyethylene of the cut section after carrying out sticking-by-pressure closure of the 1st closure section 6 after closing the closure section 8 for ink outflow prevention of drawing 3 so that the ink discharged at the time of the sticking-by-pressure closure may not jump out besides a pack, and air may not remain in the ink stockroom 2, sticking-by-pressure closure of the 2nd closure section 7 was carried out further.

[0004]

However, by the above-mentioned approach, air may remain in the ink storage 2 in the case of the 1st closure, and the yield of an ink package was about 70 - 85%.

[0005]

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## MEANS

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### [Means for Solving the Problem]

It is solved by using the ink bag pack characterized by equipping this design with the ink

stockroom connected by the gate section 3 which narrowed the part inside the pack opening 1 which pours in ink in the ink bag pack which stores the ink used for ink jet record in order to solve the above-mentioned technical problem, and changing.

[0006]

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## OPERATION

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[Function]

According to this design, by forming the gate section 3 which narrowed the part inside the pack opening 1 of an ink bag pack, ink effluent resistivity increases in the dissolved gas removal process in ink, and the outflow pack outside of ink can be mitigated within 10%. Moreover, since the ink discharge for preventing that air remains in an ink bag pack at the time of the sticking by pressure closure of an ink pack since the distance of the closure section is short can be mitigate and it is not necessary to close pack opening, it becomes possible to cancel the fault that air remains in a pack at the time of the sticking by pressure closure, and to acquire dependability sufficient by the closure which is 2 times.

[0007]

---

## EXAMPLE

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[Example]

Below, the example of this design is explained based on drawing.

Drawing 1 is the typical appearance perspective view of the ink bag pack concerning this design, and the gate where container opening which is a \*\* ink inlet, and 2 connect an ink stockroom, and 3 connects container opening and an ink stockroom, and 4 express ink derivation opening and the shaft run through hole which needs 5 at the time of an ink package production process.

[0008]

Drawing 2 is the typical appearance front view of an ink bag pack, and the 2nd closure section for 6 to raise the 1st closure section and for 7 raise the adhesion reinforcement of the polyethylene resin of the cut section of the 1st closure section upper part and 9 express the abandonment part of an ink bag pack.

Drawing 3 is the appearance front view of the conventional ink bag pack, and the closure section for ink outflow prevention for the ink which 6 discharges the 1st closure section in a sticking-by-pressure closure process and 7 in the 2nd closure section, and discharges 8 at the time of the 1st closure to prevent flowing out out of a pack is expressed.

[0009]

About this design, the flow outside a pack of the ink at the time of the dissolved GAZU removal process of ink and the ink discharge at the time of the sticking-by-pressure closure are mitigable 20 to 30% compared with the conventional ink bag pack by making closure section distance of an ink bag pack conventional conventional  $1/5 - 1/3$ . Since the workability of the ink impregnation to an ink bag pack by the ink outflow prevention effectiveness decreasing and it being  $1/5$  or less will fall when closure section distance becomes  $1/3$  or more [conventional], the closure section distance of conventional conventional  $1/5 - 1/3$  is suitable. This amount of ink outflow mitigation is equivalent to

printing number of sheets (in the case of 5% of rates of printing) increasing 5 to 10% in one ink bag pack in the case of a paper size A0. For this reason, in order to compensate an ink bag pack with a part for ink discharge like before, it is not necessary to pour in the ink of 2 - 3 premium of convention weight beforehand, and the futility of ink can be prevented, and it leads to the cost cut of an ink cartridge. Moreover, although the closure was conventionally performed 3 times like the 1st closure section 6 of drawing 3, the 2nd closure section 7, and the closure section 8 for ink outflow prevention at the time of the sticking-by-pressure closure, dependability sufficient by the closure could be secured twice, and it became possible to improve the yield at the time of the sticking-by-pressure closure of an ink bag pack to improvement in workability, and coincidence from 70 - 85 conventional% to 90% or more.

[0010]

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the typical appearance perspective view of the ink bag pack of this design.

[Drawing 2] It is the typical appearance front view of the ink bag pack of this design.

[Drawing 3] It is the typical appearance front view of the conventional ink bag pack.

[Description of Notations]

1 Pack Opening

2 Ink Stockroom

3 Gate

4 Ink Derivation Opening

5 Shaft Run through Hole

6 1st Closure Section

7 2nd Closure Section

8 Closure Section for Ink Outflow Prevention

9 Ink Bag Pack Abandonment Part

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[Translation done.]